

**REMARKS**

In the Office Action, the Examiner:

- a) objected to claim 15 was objected to under 37 C.F.R. 1.75(c) as being in improper form;
- b) rejected claim 15 under 35 U.S.C. 101;
- c) rejected claims 2, 10, 11, and 13-15 under 35 U.S.C. 112, second paragraph, as being indefinite.
- d) rejected claims 1, 3, 4, 9, and 10 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,282,106 to Grass ("*Grass*")
- e) rejected claims 1-3 and 13 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,233,039 to Schmidt ("*Schmidt*");
- f) rejected claims 2, 5, and 16 under 35 U.S.C. 103(a) as being unpatentable over *Grass*, in view of U.S. Patent No. 6,667,875 to Hartmann ("*Hartmann*");
- g) rejected claims 11 and 12 35 U.S.C. 103(a) as being unpatentable over *Grass*, further in view of U.S Patent No. 2,838,737 to Duncan ("*Duncan*");
- h) rejected claims 7, 8, and 15 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Grass* or *Schmidt*, further in view of British Patent Publication No. GB2014899 to Galimberti ("*Galimberti*");
- i) rejected claim 13 under 35 U.S.C. 103(c) as being unpatentable over *Grass*, in view of U.S. Patent No. 4,541,848 to Masuda ("*Masuda*"); and
- j) rejected claims 6 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Grass* or *Schmidt*, in view of JP 2001-170441 to Inomata ("*Inomata*").

**Status of the Claims**

By this Amendment, Applicant has amended claims 1-15 and added new claims 18-20. Support for the amendments can be found in Applicant's specification at, for example, page 2, lines 5-8 and 25-27 and pages 5-7 and in the drawings as originally filed.

### **Response to Claim Objections and Rejections under 35 U.S.C. § 101**

In particular, claim 15 has been amended into independent form in conformance with U.S. practice. Therefore, Applicant respectfully requests withdrawal of the objection to claim 15 under 37 C.F.R. 1.75(c) and the rejection of claim 15 under 35 U.S.C. 101.

### **Response to Claim Rejections under 35 U.S.C. § 112**

With respect to claims 2 and 15, they have been amended in conformance with U.S. practice.

With respect to the feature of "LR-circuit" previously recited in claims 10 and 11, Applicant has amended the claims to recite an "inductance-resistance circuit."

With respect to the features of "AC/DC pulse converter" and "AC/DC/AC converter" recited in claims 13 and 14, Applicant has amended the claims to recite "AC-to-DC pulse converter" and "AC-to-DC-to-AC converter," respectively.

In view of the amendments, Applicant respectfully requests withdrawal of the rejections of claims 2, 10, 11, and 13-15 under 35 U.S.C. 112, second paragraph.

### **Response to Rejections Under 35 U.S.C. § 102**

Applicant respectfully traverses the rejection of independent claim 1 under 35 U.S.C. 102(b) as being anticipated by either *Grass* or *Schmidt*, as set forth in the Office Action.

In order to properly establish that either *Grass* or *Schmidt* anticipates claim 1 under 35 U.S.C. § 102, each and every element of each of the claims in issue must be found, either expressly described or under principles of inherency, in that single reference. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." See M.P.E.P. § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, (Fed. Cir. 1989).

Claim 1 now recites a combination including, for example, "a diode element connected between the high voltage source and the discharge electrode, the diode element delivering to the discharge electrode a positive DC high voltage component

comprising a superposed AC high voltage component” (emphasis added). Applicant respectfully submits that *Grass* and *Schmidt* fail to teach or suggest at least the above-recited elements of claim 1 and thus do not anticipate the claim.

A. The *Grass* reference

*Grass* describes a power supply for an electronic precipitator including a transformer and a high-voltage rectifier. See *Grass*, Abstract. In particular, *Grass* states that “[t]he plate-shaped electrodes 15 of the electric filter 14 are connected to the grounded, positive pole 16 of the rectifier 11, whereas the spray electrodes 17 charged negatively relative thereto are coupled to the negative pole 44 of the rectifier 11” (emphasis added). See *Grass*, column 5, lines 31-35. *Grass* makes absolute no mention of “a diode element connected between the high voltage source and the discharge electrode, the diode element delivering to the discharge electrode a positive DC high voltage component comprising a superposed AC high voltage component,” as now recited in claim 1.

Applicant submits that *Grass* fails to teach or suggest every element of claim 1 and therefore does not anticipate claim 1.

B. The *Schmidt* reference

*Schmidt* describes a power supply for an electric precipitator. See *Schmidt*, Abstract. Specifically, *Schmidt* states that “[t]hese and other objects of the invention are achieved in a power supply for an electric precipitator, the power supply including a d-c voltage source and a pulsed a-c voltage source coupled to the high-voltage electrodes of the precipitator. The improvement comprises the pulsed a-c voltage source comprising a high-voltage transformer including a primary winding and a secondary winding, the secondary winding being coupled to the high-voltage electrodes; a d-c voltage source having positive and negative voltage terminals, one of which is coupled by means of a center tap to the primary winding of the transformer.” See *Schmidt*, column 1, lines 43-47.

According to *Schmidt*, the d-c voltage and the pulsed a-c voltage are respectively provided by separate sources, i.e., a d-c voltage source and a pulsed a-c voltage source. Neither of the voltage sources provides a “positive” DC high voltage component

to the electrode. Therefore, *Schmidt* fails to teach or suggest at least "a diode element connected between the high voltage source and the discharge electrode, the diode element delivering to the discharge electrode a positive DC high voltage component comprising a superposed AC high voltage component," as now recited in claim 1.

Applicant respectfully submits that *Schmidt* fails to teach or suggest every element of claim 1 and therefore does not anticipate claim 1. For at least these reasons, Applicant respectfully requests the Examiner reconsider and withdraw the rejections of claim 1 under 35 U.S.C. 102(b).

With respect to claims 2-4, 9, 10, and 13, they depend from independent claim 1 and thus include all of the elements thereof. For at least the same reasons, Applicant respectfully requests the Examiner reconsider and withdraw the rejections of claims 2-4, 9, 10, and 13 under 35 U.S.C. 102(b).

#### **Response to Rejections Under 35 U.S.C. § 103**

Applicant respectfully traverses the rejections of claims 2, 5-8, and 11-17 under 35 U.S.C. § 103(a) as being obvious from *Grass* or *Schmidt* in view of *Hartmann*, *Duncan*, *Galimberti*, *Masuda*, and *Inomata*. A *prima facie* case of obviousness has not been established.

"The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. . . . [R]ejections on obviousness cannot be sustained with mere conclusory statements." *M.P.E.P.* § 2142, 8th Ed., Rev. 7 (July 2008)(internal citation and inner quotation omitted). "[T]he framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). . . . The factual inquiries . . . [include determining the scope and content of the prior art and] . . . [a]scertaining the differences between the claimed invention and the prior art." *M.P.E.P.* § 2141(II). In rejecting a claim, "Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art." *M.P.E.P.* § 2141(III).

Claims 2, 5-8, 11-14, and 16-17 depend from claim 1 and thus include all of the elements thereof. None of *Hartmann*, *Duncan*, *Galimberti*, *Masuda*, and *Inomata*

teaches or suggests “a diode element connected between the high voltage source and the discharge electrode, the diode element delivering to the discharge electrode a positive DC high voltage component comprising a superposed AC high voltage component,” as now recited in claim 1. The Office asserted that *Hartmann, Duncan, Galimberti, Masuda, and Inomata* teach various elements of dependent claims 2, 5-8, 11-14, and 16-17. Even if these assertions were correct, which Applicant does not concede, these cited references still fail to teach or suggest the above-quoted elements recited in claim 1 and included in claims 2, 5-8, 11-14, and 16-17, dependent from claim 1. Thus, *Hartmann, Duncan, Galimberti, Masuda, and Inomata* do not compensate for the deficiencies of *Grass and Schmidt*.

For at least this reason, no *prima facie* case of obviousness has been established. The rejection of dependent claims 2, 5-8, 11-14, and 16-17 under 35 U.S.C. 103(a) as being obvious from *Grass* or *Schmidt* in view of *Hartmann, Duncan, Galimberti, Masuda, and Inomata* is thus improper and should be withdrawn.

Claim 15 has been amended into independent form and recites a combination, for example, including “an elongated body having a plurality of projecting members extending on at least one side of the body, wherein the elongated body comprises at least one elongated strip with the projecting members separated by punched-out spaces.” Applicant respectfully submits that the references cited in the Office Action fail to teach, suggest, or render obvious the combination recited in amended claim 15. Claim 15 is thus allowable.

### **New Claims**

New claims 18 and 19 depend directly or indirectly from independent claim 15 and new claim 20 depends from independent claim 1. For at least the above reasons, these new claims are also allowable.

**Conclusion**

In view of the foregoing, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account 06-0916.

Respectfully submitted,

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